

# Embraer Legacy

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The Embraer Legacy is an executive version of the ERJ-135 regional airliner, itself a derivative of the larger ERJ-145. The Legacy is available in two versions—the 3,100-nm, \$20.8 million Executive or 19-passenger, \$17.8 million Shuttle.

Embraer's Legacy is an impressive corporate version of the company's venerable ERJ-135/145, some 700 of which are currently the workhorses of many regional airlines around the globe. The São Paulo, Brazil-based manufacturer has delivered 19 Legacys since certification in September last year, but Chicago Midway-based Indigo's recent suspension of service could put a crimp in Embraer's order book since that carrier was slated to accept 25 aircraft and held options for 50 more. Embraer has not released any details about how Indigo's service issues will affect future deliveries. Embraer officials contend the Legacy order book is still holding steady at firm orders for 58 aircraft and options on 92.

The Legacy is considered a trade-up aircraft for companies moving out of a Hawker 800, Learjet 60 or Challenger 601. But an astounding aspect of the Legacy is that it will comfortably seat 13 in a cabin only slightly smaller than that of a G500, but at half the price. With a 3,100-nm range, the Legacy is capable of New York to London, Singapore to Tokyo or London to Riyadh nonstop. Paul Moore, Indigo's former chief pilot and now director of operations for Atlantic Aviation Flight Services, said, "The Legacy is certainly a great niche airplane for anyone who operates a GV. It is a perfect domestic aircraft. Fly it from New York to Houston and you'll save a bunch of money and have a cabin almost the size of the Gulfstream."

Swift Aviation president Ernie Edwards addressed the Legacy's dispatch reliability: "We wanted something economical and reliable for our charter fleet. The only delay we've experienced with our Legacy was two hours once, out of more than 1,000 flight hours."

Surprisingly, the majority of Legacy Executives are currently registered outside the U.S. Edwards, whose company has four more Legacys on order, said, "We plan to rotate out of our Citation Xs and Falcon 2000s to an all-Legacy fleet of five aircraft. The Legacy offers us the opportunity to deliver the cabin of a long-range aircraft at the price of a Falcon 2000 or a Challenger 604."

The Legacy is built in two versions. The Executive lists for \$20.8 million, while the Shuttle—which seats up to 19—can be had for about \$3 million less. Although exact comparisons of the Legacy with other aircraft are difficult because it is larger than most competitors, but slower than a number of them, the \$20.2 million Gulfstream G200 is often the aircraft even Embraer keeps its eyes on closely.

Of the 19 Legacys delivered, eight have been Executives. The Shuttle retains the cabin space of the Executive, but with an additional wardrobe and stowage cabinet and a larger baggage compartment (325 cu ft). Pfizer operates two Legacy Shuttles, while Conoco Phillips operates one. Legacy Shuttles have also been in operation at Intel for well over a year.

As with the rest of business aviation today, the Legacy—which begins life on the same line as the ERJ-135/145—has been slow to sell. The company is currently producing 1.5 Legacys per month and tells customers to expect an eight- to 10-month wait for delivery if they sign today. Like most manufacturers, Embraer hopes the world economy turns around, and it remains prepared to increase the production rate in the near future to 18 to 24 Legacys per year. Embraer said it can be ready for that eventuality very quickly, since it can recall some of the 1,800 local workers in Brazil it laid off in 2001.

## Legacy's Evolution

Transformation of the basic ERJ-135 airframe that evolved into the Legacy included the addition of seven-foot winglets for added lift and drag reduction; fuselage reinforcements for underbelly and cargo compartment fuel tanks; and a modified fuel-transfer system. Although the aircraft is built at the São Paulo facility, more than 73 percent of the components used in its construction are built by U.S. suppliers. The aircraft has a circular cross-section fuselage, rear-mounted high by-pass ratio engines, low-mounted swept wings and a T tail. The wings are of two-spar wing design, with a third spar to support the landing gear. The wing and T-tail leading edges are made of aluminum. The fin leading edge is of composite construction.

Initial work on the Legacy—dubbed the "executive jet for the new economy" by Embraer—began in Brazil in late 1999. Frederico Curado, Embraer's executive vice president for the civil aircraft market, said, "We knew we had a reliable platform from our regional experience. We also quickly realized we could create a totally new business line with a very attractive cost per seat mile for business aircraft of its cabin comfort and size." While Embraer won't comment on the dollar investment in the Legacy program, a spokesman said, "The commonality between the Legacy and the 135 is what allows us to offer this aircraft at such a

competitive price.”

Tom Brandau, director of aviation for Pepsi Americas in Minneapolis, considered a Legacy when it was time to trade in the Hawker 800. “I see the Legacy’s airliner heritage as a strong point.” The Legacy includes roughly 60-percent compatibility with its regional airline brothers. The airframe is derived from a long line of airliners designed to handle the punishment of thousands of cycles per year. Embraer has nearly four million flight hours of experience with the ERJ-135/145/Legacy family.

“With that kind of development work under its belt, the Legacy can be expected easily to handle the typical corporate life of 500 or so cycles each year. Legacys are delivered with a five-year warranty on all Embraer components, the engines, APU and avionics. Additionally, Embraer offers Total Legacy Care, which guarantees a fixed cost per hour to cover all regular and unexpected maintenance costs.

“That lineage also means that if you need parts and service anywhere, the system is already well established,” Brandau added. Embraer also adds paint to the Legacy that is more durable than that applied to the ERJ-135. U.S. Legacy service centers are located in Nashville, Tenn.; West Palm Beach, Fla.; Tulsa, Okla.; St. Louis; Winston Salem, N.C.; Cleveland; and Chicago. International service centers are located on every continent, except for Africa. FlightSafety, the official training organization for the Legacy, has Legacy/ERJ-135 simulators in Houston; Paris; Dallas; St. Louis; Wilmington, Del.; Rio de Janeiro; and Manchester, England.

A number of pilots **AIN** spoke to admit that the Legacy’s service ceiling of 39,000 feet is an issue and centered on their corporate need to fly high for longer periods of time to avoid much of the airline traffic beneath. Embraer’s spokesman said there is no increase in service ceiling currently planned for the Legacy.

### The Competition

The Legacy fits comfortably into the super-midsize category, but direct comparisons with other aircraft can be difficult since the Brazilian airplane crosses so many product line capabilities. The Legacy offers a 1,410 cu ft cabin, nearly as large as that of the Gulfstream 500’s at 1,669 cu ft, or even the G300 at 1,525 cu ft, but at a considerably lower cost. Thanks to 26 windows, the Legacy cabin is also quite bright. The Gulfstream 200 is faster—Mach 0.85 versus the Legacy’s Mach 0.80 Mmo (Mach 0.78 on the shuttle)—but the G200 has only 868 cu ft of interior space. The G200 carries four people 3,600 nm with NBAA reserves and cargo capacity of 150 cu ft. The Legacy comfortably seats 13—and as many as 16—and will typically fly 3,100 nm with 10 passengers and offers a cargo compartment that is 240 cu ft, 14 cu ft larger than the G550’s. The Shuttle delivers a maximum range of about 1,700 nm.

The Legacy’s Rolls-Royce AE3007-AE1 engines—upgraded versions of the powerplants on the ERJ-135—produce 7,953 pounds of thrust each at sea level and are already Stage 4 compliant when all parameters are considered cumulatively. The -AE1s have double-redundant FADEC. The shuttle version uses slightly smaller Rolls-Royce-A1/3 engines.

The Legacy is 86 feet 5 inches long, 22 feet 2 inches high and has a wing-span of just under 69 feet. The fuel tanks include two in the forward belly (3,765 pounds capacity), two in the wings (11,403 pounds) and two in the tail (2,734 pounds) for a total of 18,328 pounds of fuel capacity. Beginning with S/N 625, the Legacy’s maximum ramp weight rose to 49,758 pounds from 49,096 pounds, as the mtow increased to 49,604 pounds from 48,942 pounds.

### The Flight

Embraer offered one of its most experienced line pilots, former Airbus and Brasilia captain Marcelo Romanelli, to fly with me in early June to evaluate the Legacy—in this case PT-SDN—on two separate flights in a variety of conditions, from severe VFR to dodging intense lines of southern Florida thunderstorms in IMC.

As a former Brasilia pilot many years ago, I felt right at home walking into the cockpit of the Legacy. Indeed, looking from the airstair door forward, the shape of the old EMB-120 is easy to discern. But once you press the button on the left side of the door to lower the airstair—it takes about four seconds to lock into place—and climb aboard, it is clear you are no longer looking at anything that even closely resembles the Brasilia. Although the type rating the FAA stamps on all Legacy pilot certificates says ERJ-145, Embraer’s official designation for the aircraft is the ERJ-135BJ.

With its dark Brazilian Baminga wood cabinets, gold-plated hardware and granite-like countertops, the cabin on the Legacy looked like one I’d seen on a much larger, more expensive aircraft. The standard headliners are brushed beige velour. A quick walk down the length of the cabin points out a very important feature aboard this aircraft that Embraer has honed to a science—how to make use of every inch of space inside the aircraft.

The plush leather seats swivel into a wide variety of configurations, and each contains a 110-volt power plug for a laptop. The built-in Baker stereo—convenient yet well hidden in a cabinet just across from the large galley near the entrance door—offered superb sound on the ground (we didn’t have a chance to try it aloft). Standard Legacy equipment includes dual DVD players with two 15-inch monitors. True to form for the Brazilian culture, a handy option for long flights is the espresso machine in the galley. The fax and



The Legacy is powered by a pair of Rolls-Royce AE3007-AE1 turbofans.

printer drawers are also convenient, yet well hidden in a mid-cabin cabinet.

A sliding divider curtain is available to offer cabin passengers additional privacy from the flight crew. The flight attendant or the VIP seat can control the cabin temperature through its full range. There is also a large door in the rear lavatory offering direct in-flight access to the pressurized and heated baggage compartment.

Walking forward to the cockpit, I found entry to either seat to be easy—much easier than on some larger aircraft I've flown, in fact—since in addition to the fore and aft movement on the seats, they also move sideways. Tall pilots will really enjoy the legroom on this aircraft.

Romanelli offered me the left pilot seat, which I gladly accepted. The vertical movement of the cockpit seats is electrically controlled with a switch on the outboard side of the seat. The rudder pedals are also electrically adjusted by a toggle switch at the bottom of the instrument panel. The Legacy uses the traditional ram's horn yoke of earlier Embraers.

We did a quick battery check and fired up the APU before we began the walkaround. The APU start involved switching both batteries to auto, right wing pump, fire test and start to bring the avionics online. The standard Legacy cockpit is built around a Honeywell Primus 1000 system consisting of five 8-by-7-inch panel screens, including two pilot flight displays, two multifunction flight displays and one EICAS to track engine and systems information. The Legacy includes dual Laseref IV inertial reference systems (IRS), dual air-data computers, dual Honeywell FMS+GPS, satcom and an autopilot certifiable to Cat II standards. The aircraft is already RVSM certified.

The easy-to-see standby instruments are a fully integrated package built by Thales with a separate battery that lasts four hours, well beyond the standard 30 minutes on most aircraft today. The unit displays altitude, airspeed, baro-corrected altitude, Mach number, skid-slip and heading information derived from the IRS.

I liked some of the simple yet practical things I found during the walkaround, such as a method for tracking proper tire pressure. The Legacy comes standard with built-in tire-pressure gauges attached to each wheel. Although tiny, they are easy to read during the preflight.

There is also a parking-brake sensor near the nosegear so one can tell if the brake is set from outside, before the aircraft is towed. Two oxygen bottles—50 cu ft for the crew and 77 cu ft for the passengers—replace the oxygen generators from the ERJ-135 for efficiency.

Strakes have been added beneath the rear fuselage and vortillons beneath the leading edge of the wings to increase stability, especially because of the yaw produced by the winglets. Although the ventral strakes do detract somewhat from the aircraft's clean lines, they make up for it in dispatch reliability, since the strakes can negate the need for a yaw damper on the MEL list for short periods. The strakes under the leading edges of the wings assist with air flow over the ailerons.

#### Light the Fires

Once back in the cockpit, a quick look at the eyebrow panel confirms that systems are easy to troubleshoot. But the redundancy built into the Legacy probably won't offer a pilot much practice with broken items. The aircraft has five 500-amp generators on board, for example, with two on each engine and one on the APU, any one of which can support the entire aircraft. The APU can be air-started up to FL300.

The eyebrow panel also does not extend very high above the pilot's head, something us old guys with bifocals appreciate. A nice troubleshooting touch is that Embraer has retained the "Miss Brasilia" aural warning system most EMB-120 pilots will remember instead of numerous chimes and bells. Nobody at Embraer claims to know the identity of the sultry voice that warns of oncoming trouble.

The only faults I found in the cockpit were minor, yet somewhat annoying for an aircraft as well thought out as the Legacy. The plastic pull-out trays just below the glareshield used to hold the checklist are so flimsy that the slightest pressure would probably snap them off in your hand. The checklist is also not stored anywhere digitally, which struck me as odd, considering all the other automation on the



Trailing-link landing gear, right, helps make nearly every landing perfect.



Vortillons beneath the leading edge of the wings help improve stability, especially because of the yaw produced by the winglets.



Boasting 1,410 cu ft of cabin space, the Legacy has by far the largest cabin in its class.



The Legacy flight deck is built around a five-screen Honeywell Primus 1000 system.

airplane.

The “before start” flow checklist is pretty simple since everything is depicted on the eyebrow panel. Almost all switches are set to auto before starting. I started the left engine by pulling the start button out, turning momentarily to start and releasing the switch. The rest was automatic, and even with the headset off there was no noticeable noise as the engines spooled up. The FADECs even turned off the packs automatically for the start sequence.

Once we had N2 rotation, the ignition came on at 18 percent. The Legacy does not use any conventional fuel control levers, but the light off began at about 31 percent. The start sequence terminated at near 57-percent N2, and the engine idled smoothly at about 64 percent.

After repeating the process for the right engine, Romanelli called for the clearance and taxi instructions to 9L at Fort Lauderdale International Airport (FLL), Fla., as we put on the Sennheiser noise-canceling headphones that come standard with the Legacy. I was a bit surprised to see headphones in a jet of this size, but I would soon learn they are a valuable asset. Another surprise to me was that the performance information available on the copilot’s MFD must be manually typed into the FADEC. Romanelli told me to expect a first-hour fuel burn of 3,300 pounds at maximum speed, and 2,156 pounds in the second. Long-range-cruise fuel-burn figures are 3,080 pounds for the first hour and 2,068 pounds for the second and a speed of Mach 0.73.

I began the taxi with the gust lock engaged, but there was still plenty of thrust to get the aircraft rolling. The nosewheel steering was very responsive. I did find the brake pedals—a brake-by-wire system—extremely heavy, but they quickly became something every pilot will love for the most part since they make it easier to avoid jerking the passengers around as you turn and stop. For a guy who used to drag the brakes on taxi, I found that the Legacy’s visual brake-temperature indicators on the copilot’s MFD helped keep me honest. Romanelli ran the taxi checks—essentially flaps set to nine degrees, trims and flight instruments checked, along with flight controls.

Still pointed west just before takeoff, we turned on the radar to take a look at the huge cells building over the Everglades that we’d see on the way back. At an outside temperature of 30 degrees C and a takeoff weight of 44,000 pounds, V1 was 117 knots; VR, 127 knots; and V2, 133 knots. Romanelli reminded me not to use the tiller once we lined up for takeoff since the rudder pedals, with six degrees of movement in either direction, would offer plenty of control.

We also discussed the procedures in case of an engine failure. The Legacy offers three takeoff power settings—90-, 100- and 110-percent thrust. If you lose an engine during a 90-percent power takeoff, Embraer’s Automatic Takeoff Thrust Control System (ATTCS) advances the operating engine to 100 percent after sensing the bleed-air temperature difference. If the power is already set to 100 percent when one engine fails, the surviving engine increases to 110 percent. If you’d firewalled the takeoff to 110-percent initially, the operating engine can hold 117-percent power—nearly 9,000 pounds of thrust—for five minutes.

We were cleared for takeoff on runway heading to 3,000 feet. Since we were light, we planned a reduced-thrust takeoff to save a little wear and tear on the engines. The final check before power application is to push the takeoff button on the panel just above the throttles to check the configuration, much like the old manual “FATS” check did to include flaps, airbrakes, trims and speeds. If properly configured for takeoff the female voice confirms, “Takeoff OK.”

On a reduced-thrust takeoff, both air-conditioning packs—one for the cockpit and one for the cabin—remain in operation. If we’d used 100 percent power for takeoff, the packs would have closed automatically when I advanced the thrust levers. If an engine quit on takeoff, the packs would also close automatically as well.

I brought the thrust levers to the takeoff detent—the Legacy does not have autothrottles—as Romanelli selected takeoff thrust on the thrust-rating panel. Despite the high OAT, acceleration was quick. At Vr I pulled back on the yoke, but thanks to an earlier caution from my copilot I stopped the rotation just as the nose came up to about seven or eight degrees. It stopped nicely at about 12 degrees nose up as we left the ground. As the speed increased, I called for gear and flaps up as I aimed for my target climb speed of 240 knots. The plan was to hold 240 knots until 10,000 feet, then accelerate to 290 knots until Mach 0.65, which I’d follow all the way to altitude. Romanelli completed the after-takeoff checks, verifying gear and flaps up and hitting the climb power button on the thrust panel.

We filed over PBI, J79 to SAV, which would put us about 80 miles over the ocean. But it was already quite steamy at our midday departure in South Florida and huge storm cells were everywhere. I continued to hand fly the aircraft as the speed quickly built to 240 knots. As we climbed, I noticed the large windows on the Legacy. They’re tall and wide and wrap slightly behind each pilot for spectacular visibility.

Miami Center was almost inundated since everyone wanted to head in a direction different from their flight plan because of the weather. We leveled and climbed and turned for some 20 minutes, but were finally stopped at FL230. ATC also told us the chances of climbing higher for air work were slim to none as we turned back east around some foaming buildups. By the time the Center controller turned us south and aimed us at the first point on the STAR back to FLL, we knew we were going to be lucky just to get back on the ground with the cells building everywhere.

Although we hadn’t needed it yet, Romanelli explained that the Legacy uses two ice detectors and that ice protection is fully automatic, heating the edges and inlets as necessary. If the system senses ice while descending at idle thrust, the FADEC will keep the power at the required minimum to provide the proper amount of bleed air for heat.

Turning back toward Fort Lauderdale, we asked Miami Center if there was any chance of a few multiple approaches somewhere. There wasn’t. Descending through 13,000 feet, still doing about 280 knots, I tried some Dutch rolls and found the airplane to be a little stiffer than I would like, but certainly quite controllable. We were asked to keep our speed up below 10,000 feet as Miami aimed us at FLL. A huge cell was sitting about six miles west of the airport, so our only option was a left base in for a visual to 9L.

Romanelli added flaps nine degrees when we saw the airport, and I began slowing down even though that flap setting can be added at 250 knots. The gear came out and flaps went to 18 degrees as I turned final, where the air was already getting quite bumpy. Tower warned of a reported wind shear on final as we added flaps 22 and briefed on the possibility of a go-around, although the actual alert never came. At a mile-and-a-half, I called for flaps 45 and aimed for a target of Vref+15 for the wind shear. That turned out to be 138 knots. The ride to the flare was a handful, and on the first landing the runway arrived before I was ready, resulting in a firm landing. The folks in the cabin said the Legacy's trailing link gear made it feel just fine, but I think they were just being polite.

The reverser handles on the Legacy are almost well hidden under the throttles, and it can take a second or two to find them. But once out, they helped slow the aircraft with little noise increase inside the cabin and no wing-rocking tendency on the runway. Transitioning to the brakes is often where nosewheel dancing begins on many airplanes, but the transition in the Legacy was extremely smooth. The Legacy does require some ample leg muscles on the brakes to stop, however. We taxied back to Embraer's facility and shut down the airplane, all of us frustrated at flying for only 40 minutes. We were so busy during this short flight that I never had a chance to evaluate much of the airplane's automation.

#### Another Attempt

But thanks to some helpful Embraer employees and a much improved weather outlook a few days later, I had an opportunity to fly the Legacy once again.

Having been through most of the preflight and start checks on the previous flight, Romanelli and I again departed FLL northeastward, with the OAT showing a toasty 33 degrees C. V1 was 115 knots; Vr, 125 knots; and V2, 130 knots. With 11,170 pounds of fuel on board, the aircraft weighed 41,674 pounds at takeoff. Climbing through 10,000 feet, I engaged the autopilot and set the speed bug for 290 knots. The airplane complied and I saw a rate of climb nearing 2,300 fpm. There is no doubt the Legacy is a quick climber, although we were operating at nearly the same weight as the first flight—some 7,000 pounds under gross weight.

Leaving FL240, I removed the headphones for a noise check, and although I found the noise quite tolerable during the time I had the headphones off, I actually found myself anxious to put them back on, which speaks volumes about the noise-canceling Sennheisers. They sat extremely light on my head and put a serious dent in the noise level that is normally found in any cockpit. I really enjoyed flying with them.

We again filed toward Savannah and climbed straight to FL370, an altitude we reached in 23 minutes. Crossing traffic prevented a direct climb to FL390 for almost 10 minutes. Cabin altitude at FL370 was 7,400 feet. An OAT of -51 degrees C produced 462 ktas, with a fuel flow of 1,270 pph per engine. While level at FL370, I took an opportunity to walk back in the cabin to check the noise level.

The noise shroud Embraer developed for the area around the entrance door is wonderful. When you remove the shroud to test the difference, the increase in the noise makes you wonder why other manufacturers haven't already thought of adding this.

Sitting in the rear of the cabin, I found the noise level much quieter than in other parts of the cabin, and on a long flight I'd head back there. There was a definite increase in cabin noise as I walked forward near the wing root.

I returned to the cockpit as Romanelli finished the climb to FL390 for our speed check. We eventually saw Mach 0.791 with a fuel burn of approximately 1,100 pph per side at an OAT of -57 degrees C. Long-range cruise at this altitude means pulling the speed back to about Mach 0.72. Cabin differential here was 8.0 and gave us an 8,100-foot altitude.

#### Handling Characteristics

I turned off the autopilot and performed a few steep turns to aim us back toward our first stop, Florida's Orlando Executive Airport. Like most airplanes, if you trim properly in 45- to 60-degree banks and goose the power just slightly, the Legacy will hold altitude nicely with a minimum of pilot input.

The aileron and the rudder are hydraulically boosted, but the elevator is conventionally controlled. The turns proved to be a non-event as we started our descent, and the superb visibility out the windows was evident in both directions. I recoupled the automation and set up for the back course into Runway 25 at Orlando Exec. Vref was 126 knots. Still speeding along at 285 knots through 14,000 feet, I again removed my headset and comfortably held a conversation with Romanelli.

Orlando Approach was extremely busy as we arrived and offered us only a visual approach, but ATC approved a square turn to final to allow us to capture the localizer. Perhaps because of the 40-degree angle of intercept, the airplane never did couple and flew through the localizer at the five-mile point. I disengaged the autopilot and hand flew the airplane. Once configured at flaps 45, the Legacy has a very solid feel all the way to the ground. This time I was ready for the slight nose heaviness of the airplane and flared for a smooth connection with the ground and a touch-and-go on the 6,000-foot runway. I steered as Romanelli brought the flaps up to 9, and we were off again with ample runway to spare.

Despite the fact that the tower controller could not seem to understand the difference between a PT and an N-registered aircraft, we remained in right closed traffic. I had to quickly pull the power back during the climb to keep the speed manageable and remain beneath the traffic on final for the 18s at Orlando Executive. The Legacy is fast down low, something the pilot needs to be ready for.

Opposite the numbers, I called for flaps 18 and gear and slowed to 140 knots. Once the gear and flaps are down, traffic patterns



Built-in tire pressure gauges ensure proper inflation.

are easy, despite the fact that the tower sequenced us behind an Aztec that forced me to perform a few S-turns. We completed two more VFR patterns before our full stop for some fuel. I was getting comfortable in the airplane after about two-and-a-half hours of flying. I realized there was little not to like on this airplane.

On our takeoff from Executive, we filed for 14,000 feet toward Fort Myers, Fla., for some additional air work before returning to FLL. It was mid-afternoon again and we made a few tight turns right after takeoff to remain clear of the rapidly building cells. The deviation continued until we were 40 miles southwest of MCO, with many buildups climbing faster than the Legacy.

But we did slow the aircraft to simulate some single-engine work while we were still down low. With climb power on both engines, Romanelli pulled back the right thrust lever. Granted, we were 4,800 pounds below gross, but if I had not been watching the skid/slip indicator, I would almost never have even detected the engine failure because of the boost the hydraulic system offers to the rudder, (except, of course, for the subsequent reduction in airspeed).

The procedure after an engine failure is V2+15 with flaps at the takeoff setting until the level-off altitude, when the flaps are brought up and the climb continued. I performed a number of turns with one engine pulled back, and other than some additional rudder there was little difference from the steep turns at altitude. We spent another 10 minutes with more configuration changes and the right engine still at idle.

#### **Conclusion**

I really liked flying this airplane, so much that I tried quite a few more steep turns at 14,000 feet as we sashayed around more buildups. As we approached Fort Myers, Miami Center asked us to descend to 13,000 feet to set up for the STAR to FLL. Rather than simply descend, Romanelli had me slow the airplane clean to the shaker and then recover from the stall on the way down. As I brought the power up and flew through the shaker there was no tendency to fall off on either wing. Stalls seemed like another non-event. (Of course, I knew it was coming.)

The arrival to FLL gave us ample opportunity to dodge more cells that were now building into mean lines of thunderstorms over the Everglades. Not wanting to cause Miami too much grief, we kept our speed up but mentioned we'd be slowing on final if they concurred. They weren't very happy, but said OK as Romanelli pulled the left engine to idle and we set up for a single-engine, coupled ILS to 9L.

If you've flown into Fort Lauderdale, you know that ILS 9L is a bit wavy, so I was not surprised when the airplane began hunting for the localizer. We planned a flaps 22 approach with a Vref of 126 knots. Despite a relatively mild southeast wind, the autopilot gave up the fight trying to hold the localizer at around 400 feet on final. Despite that, I touched down smoothly, and using only the right reverser and brakes, I had the airplane stopped in about 4,000 feet.

The Legacy handles as easily as the Hawker. It was easy to handle down low, and the trailing-link gear makes almost every landing feel good, albeit solid. Moore believes the Legacy is "very forgiving, with good control harmony. Overall, I think it is a well designed aircraft." The airplane can easily be flown one-handed, I learned, but a firm grip on the handlebars—sorry, yoke—was easier for me. But I did come to realize that with too much pressure you can easily over-control, as I did during the first few approaches when I wagged the wings much like I did my first few times in a Learjet.

One airline analyst recently predicted that Embraer—a company that has delivered more than 5,600 airplanes in the past 34 years—will rise to fill the third position slot in aircraft manufacturing now held by Bombardier. With a Legacy, owners get the cabin of a Gulfstream at about half the cost. If the quality of the product is the only concern—once the economy improves, that is—Embraer's Legacy should prove to be a worthy competitor for all segments of the business aircraft industry. Embraer's Curado said, "The most important thing a customer needs to know about the Legacy is that we firmly stand behind our aircraft no matter what."

Edwards noted, "The Brazilians are a people who like to please. Each airplane they build is better than the last. Although they are modest in their marketing, they are eager to bring a product to market they can be proud of." Embraer appears to have succeeded.